THESIS ABSTRACT

Title of the thesis: Studies on the prediction of parturition date in bitches
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Studies were conducted to predict the parturition date in bitches on the basis of preovulatory progesterone concentrations and ultrasonographic measurements of gestational sac and head diameter, behavioural, genital and mammary changes and changes in the rectal temperature. The preovulatory serum progesterone concentration averaged 3.01 ± 0.03 ng/ml and ranged between 2.02 to 3.95 ng/ml. Parturition date in these animals was predicted as 65 days from the initial rise in serum progesterone concentration and the accuracy of prediction of parturition date to within ± 2 days was 87.85%. Prediction of parturition date using measurements of ultrasonography of both gestational sac diameter and head diameter were inaccurate in determination of gestational age or prediction of parturition date and prediction of litter size. It was concluded that it may be inaccurate to predict the date of parturition on the basis of ultrasonographic measurements using a single universal formulae although correction factors may have been suggested. It was recommended that, parturition date may be predicted more accurately when the prediction tables are developed for each class of breed. A prediction table was formulated for non descript breeds from early to late gestation and its accuracy (prediction of parturition date) was verified and found accurate to within ±2 days. Behavioural signs commenced at variable times before the onset of parturition and were found to be unsuitable for predicting the parturition date. Prepartum drop in rectal temperature is an easy technique for predicting parturition date; however, the technique allows very short time for the management of parturition by the breeder.
Graph 1. Progressive changes in gestational sac diameter of Mongrel bitches through early pregnancy

Graph 2. Progressive changes in the head diameter of Mongrel bitches through mid to late pregnancy
Figure 1: Gestational Sac visible as slightly ovoid an echoic structure
Figure 2: Irregular Gestational Sac with clearly visible fetal head
Figure 3: Estimation of gestational age using measurements of gestational sac diameter in a pug (Body weight less than 25 kgs). The gestational age in this animal was calculated as 39 days but the animal delivered 3 days before the predicted date of parturition.
Figure 4: Estimation of gestational age using measurements of gestational sac diameter in a German Shepherd (Body weight 25 to 50 kgs). The gestational age in this animal was calculated as 38 days but the animal delivered 2 days before the predicted date of parturition.
Figure 5: Estimation of gestational age using measurements of gestational sac diameter in a Great Dane (Body weight more than 50 kg). The gestational age in this animal was calculated as 25 days but the animal delivered 2 days before the predicted date of parturition.
Figure 6: Estimation of gestational age using measurements of fetal head diameter in a pug (Body weight less than 25 kg). The gestational age in this animal was calculated as 51 days but the animal delivered 2 days after the predicted date of parturition.
Figure 7: Estimation of gestational age using measurements of fetal head diameter in a German Shepherd (Body weight 25 to 50 kg). The gestational age in this animal was calculated as 66 days but the animal had delivered 2 days after its presentation.
Figure 8: Estimation of gestational age using measurements of fetal head Diameter in a Great Dane (Body weight more than 50 kg). The gestational age in this animal was calculated as 57 days but the animal delivered 2 days after the predicted date of parturition.
Figure 9: Gestational sac Diameter at 30 Days of Pregnancy in a Mongrel bitch

Figure 10: Gestational sac Diameter at 33 Days of Pregnancy - in a Mongrel bitch
Figure 11: Gestational sac Diameter at 36 Days of Pregnancy in a Mongrel bitch

Figure 12: Gestational sac Diameter at 39 Days of Pregnancy in a Mongrel bitch
Figure 13: Fetal Head Diameter at 41 Days of Pregnancy in a Mongrel bitch

Figure 14: Fetal Head Diameter at 44 Days of Pregnancy in a Mongrel bitch
Figure 15: Fetal Head Diameter at 47 Days of Pregnancy in a Mongrel bitch

Figure 16: Fetal Head Diameter at 50 Days of Pregnancy in a Mongrel bitch
Figure 17: Fetal Head Diameter at 53 Days of Pregnancy in a Mongrel bitch

Figure 18: Fetal Head Diameter at 56 Days of Pregnancy in a Mongrel bitch
Figure 19: Fetal Head Diameter at 59 Days of Pregnancy in a Mongrel bitch

Figure 20: Fetal Head Diameter at 62 Days of Pregnancy in a Mongrel bitch
Figure 21: Fetal Head Diameter at 65 Days of Pregnancy in a Mongrel bitch